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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,971	02/08/2005	Alexander Theil	265012US0PCT	1582

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

SASTRI, SATYA B

ART UNIT	PAPER NUMBER
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1796

NOTIFICATION DATE	DELIVERY MODE
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11/30/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/523,971	Applicant(s) THEIL ET AL.	
	Examiner Satya B. Sastri	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/23/07 has been entered.

2. All previous rejections are withdrawn in view of the amendment. Claims 22-33 are now pending in the application. The rejections of claims 11-21 (now cancelled) as set forth in the office action dated 8/10/07 can be extended to reject the new claims 22-32 as discussed below.

Claim Objection

3. Claim 22 is objected to because of the following informality: The total wt. % of components 1) and 2) does not add up to 100% when 1) is present in amount of 70-84.9 % by wt. Appropriate correction is required.

Previously Cited Statutes

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 23-26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the language in claim 23 is confusing because it is unclear if the phrase "said vinylic comonomer" alludes to component b) of the polymethyl methacrylate matrix 1) or to component d) of the impact modifier 2) of claim 22. In the rejections set forth below, "said vinylic comonomer" in claim 23 is interpreted as corresponding to component d) of claim 22.

6. Claims 22-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rostami (WO 00/29480) in view of Fraser et al. (US 6,172,135 B1).

At the outset, it is noted that WO 00/29480 is used for date purposes. US 6,689,832 B1 is used as the English language equivalent of WO 00/29480 in the rejection set forth below.

Rostami discloses methacrylate molding composition comprising 20-89% wt. of an acrylic polymer containing 50-99% by wt. of methyl methacrylate units and 1-50% by wt. of a copolymerizable alkyl acrylate (abstract, col. 2, lines 6-15). The acrylic copolymer has a molecular wt. between 60,000 and 180,000 (col. 2, lines 28-35). The mixture may also contain other additives, such as stabilizers, toughening agents etc. Suitable toughening agents include rubbers, present in amounts of 1-50%, more preferably, from 3-25% by wt. (col. 2, lines 58-65). The shaped article may be formed by melt molding methods such as extrusion and injection molding (col. 3, lines 1-27). The prior art also discloses that acrylic sheet materials are

particularly useful for forming bathtubs, architectural cladding, shower enclosures, paneling etc. (col. 1, lines 8-15).

It is noted that Rostami discloses an acrylic polymer containing 50-99% by wt. of methyl methacrylate units and 1-50% by wt. of a copolymerizable alkyl acrylate which encompasses the ranges recited for PMMA matrix composition in instant claim 22. With regard to the mol. wt. range, Rostami discloses a range of 60,000 and 180,000 which overlaps substantially with the presently claimed MW range.

Rostami is silent with regard to the specific composition of the impact modifier although it discloses that core-shell particle toughening agent made from butyl acrylate and methyl methacrylate may be used in the methacrylate molding compositions.

Prior art to Fraser et al. discloses impact modified (meth)acrylic copolymers, such as poly(methyl methacrylate), comprising core-shell particles (col. 1, lines 4-10). The core contains a first (meth)acrylic copolymer, preferably containing 80-99% by wt. of methyl methacrylate and 1-20% by wt. of alkyl acrylate such as ethyl and/or butyl acrylate. The first shell comprises a low T_g polymer comprising 0 to 25% by wt. of styrenic monomer and 75-100% by wt. of a (meth)acrylic monomer such as butyl acrylate and dodecyl methacrylate. The second and third shells are preferably made of first (meth)acrylic copolymer (col. 3, lines 45-67, col. 4, lines 1-20, The multistage core-shell particles are spherical in shape with an overall diameter of 270 to 300 nm (col. 4, lines 27-34).

The composition of the presently claimed impact modifier reads on the working example in col. 9 (line 25-30, claims 1-3). It is noted that 6% of butyl acrylate is recited in the claim language even though the example recites butyl methacrylate.

It would have been obvious to one of ordinary skill in the art to include the core-shell impact modifier of Fraser et al. in the compositions of Rostami and thereby arrive at the presently cited claims because Fraser et al. teach that molding articles containing such impact modifiers exhibit improved impact resistance compared with conventional multistage core-shell particles (abstract, col. 2, lines 54-59).

Given that the composition as claimed instantly is obvious over the combined teachings of Rostami and Fraser et al., the properties as recited in claims 28 and 29 must necessarily be present in the resultant composition.

With regard to process of claim 32, the primary reference discloses a process of forming a shaped article such as a bathtub or shower enclosure by melt molding techniques such as extrusion and injection molding (col. 3, lines 1-27, col. 1, lines 8-15).

Response to Arguments

7. Applicants point out that the transitional phrase “consisting essentially of” is recited in the claim language to limit the scope of the molding composition to materials specified therein. Additionally, applicants argue that the mineral fillers in Rostami’s compositions would deleteriously affect the properties thereof, as evidenced by Ancker (US 4,795,768).

Examiner maintains that although Rostami compositions necessarily contain mineral filler in amounts of 10-80% by wt., applicants have not provided any data to substantiate the fact that the presence of mineral filler in low amounts does adversely affect the novel characteristics of the claimed composition.

Firstly, examiner notes that the portions of the specification alluded to by the applicant for scientific experimental data presented therein does not provide pertinent data to show the effect of mineral fillers on the molding composition. As for the working examples, the comparative data utilizes PLEXIGLASS TM and does not afford a means of assessing the influence of mineral filler on PMMA composition. Secondly, it is noted that although the transitional phrase "consisting essentially of" is recited in claim 22, the sum of components 1) and 2) does not add up to 100 wt.% when the polymethyl methacrylate matrix composition is present in an amount of 70% by wt. Therefore, the instant claim language does not necessarily exclude low amount of unrecited components, such as inorganic fillers that are typically chemically inert by nature. Lastly, it is noted that the claim language further includes the transitional phrase "comprises" for the polymethyl methacrylate matrix and impact modifier composition and thus, unrecited components are not necessarily excluded from the composition as recited in claim 22.

It is noted that case law holds that "[i]f an applicant contends that additional steps or material in the prior art are excluded by the recitation of 'consisting essentially of,' applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention." *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). Applicant is advised to submit clear and convincing evidence in the form of a declaration that mineral filler would materially affect the basic and novel characteristics of applicant's invention.

Furthermore, the evidence provided in Ancker (US 4,795,768) to demonstrate the deleterious effect of mineral fillers is not found convincing because the thermoplastic

compositions utilized therein comprise polyethylene or an ethylene-vinyl acetate copolymer, both of which are materially different from PMMA compositions of the instant invention.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Satya Sastri at (571) 272 1112. The examiner can be reached on Wednesdays and Fridays, 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


SATYA SASTRI

November 26, 2007